

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP03/15171

A. CLASSIFICATION OF SUBJECT MATTER

Int.Cl⁷ B29C41/12, B29C41/36, B29D28/00, C12M3/00, C08J9/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl⁷ B29C41/12, B29C41/36, B29D28/00, C12M3/00, C08J9/00,
B29C59/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Jitsuyo Shinan Koho	1926-1996	Toroku Jitsuyo Shinan Koho	1994-2004
Kokai Jitsuyo Shinan Koho	1971-2004	Jitsuyo Shinan Toroku Koho	1996-2004

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y A	JP 2002-335949 A (The Institute of Physical and Chemical Research), 26 November, 2002 (26.11.02), Claims; Par. No. [0024]; drawings (Family: none)	1, 4, 7-10 2, 3, 14 5, 6, 11-13, 15-27
X Y A	JP 2001-157574 A (Terumo Corp.), 12 June, 2001 (12.06.01), Claims; Par. No. [0014]; drawings (Family: none)	1, 4, 7-10 2, 3, 14 5, 6, 11-13, 15-27
X	JP 9-155972 A (Kabushiki Kaisha YKY), 17 June, 1997 (17.06.97), Claims; Par. No. [0021] (Family: none)	1, 2, 4, 7

☒ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier document but published on or after the international filing date	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&" document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search
15 March, 2004 (15.03.04)

Date of mailing of the international search report
30 March, 2004 (30.03.04)

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6291050 B1 (THE PROCTER & GAMBLE CO.), 18 September, 2001 (18.09.01), Claims; drawings & EP 1124520 A2 & WO 2000/25715 A1 & JP 2002-528302 A	1, 3, 4, 8-10, 14
X	WO 95/32258 A1 (MINESOTA MINING AND MANUFACTURING CO.), 30 November, 1995 (30.11.95), Claims; drawings & DE 69520102 T & EP 0760840 B1 & JP 10-502305 A	1, 2, 4, 7, 8-10
X	WO 00/50232 A1 (Seiko Epson Corp.), 31 August, 2000 (31.08.00), Claims; drawings & AU 2640099 A	1, 2, 4, 7, 8-10
Y	EP 1247636 A2 (CREAVIS GESELLSCHAFT FUR TECHNOLOGIE UND INNOVATION MBH.), 09 October, 2002 (09.10.02), Claims; Par. No. [0006]; drawings & US 2002/84553 A1 & JP 2002-210821 A	2
Y	JP 10-108905 A (Ota Kabushiki Kaisha), 28 April, 1998 (28.04.98), Claims (Family: none)	3, 14
A	JP 9-239829 A (Toray Industries, Inc.), 16 September, 1997 (16.09.97), Claims; Par. No. [0008] (Family: none)	1
P, X	JP 2003-305361 A (Ricoh Co., Ltd.), 28 October, 2003 (28.10.03), Claims; drawings (Family: none)	1, 4, 8
P, X	JP 2003-253020 A (Ricoh Co., Ltd.), 10 September, 2003 (10.09.03), Claims; drawings (Family: none)	1, 4, 8
P, X	JP 2002-347107 A (The Institute of Physical and Chemical Research), 04 December, 2002 (04.12.02), Claims; drawings (Family: none)	1, 4, 7-10
P, X	JP 2003-128832 A (The Institute of Physical and Chemical Research), 08 May, 2003 (08.05.03), Claims; Par. Nos. [0015], [0016]; drawings (Family: none)	1, 4, 7-10

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Box I Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:

because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:

because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claims Nos.:

because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

(See extra sheet)

1. ☒ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest ☒ The additional search fees were accompanied by the applicant's protest.

☐ No protest accompanied the payment of additional search fees.

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Continuation of Box No. II of continuation of first sheet (1)

The matter common to claims 1-27 is a structure of microprotrusions regularly arrayed on a substrate surface. However, as a result of search, it has become apparent that this "structure of microprotrusions regularly arrayed on a substrate surface" is disclosed in JP 2002-335949 A (The Institute of Physical and Chemical Research) 26 November, 2002 (26.11.02), claims, Par. No. [0024], drawings and JP 2001-157574 A (Terumo Corp.) 12 June, 2001 (12.06.01), claims, Par. No. [0014] drawings and hence is not novel.

Therefore, the above structure is not special technical feature within the meaning of PCT Rule 13.2, second sentence.

The technical feature of claim 2 is a structure of microprotrusions regularly arrayed on a substrate surface, exhibiting water repellency. Claim 3 is directed to a structure of microprotrusions regularly arrayed on a substrate surface, having been subjected to hydrophilicity imparting treatment so as to exhibit hydrophilicity. The special technical feature of claims 5, 6, 11-13 and 15-27 is comprised of "a hydrophobic organic solvent solution containing a polymer dissolved therein is cast over a substrate, and the organic solvent is evaporated in a moist atmosphere; the moisture contained in the atmosphere over the surface of casting liquid is condensed and dewed into minute waterdrops on the casting liquid surface, which minute waterdrops are dispersed in the casting liquid surface or liquid interior in the form of closest packed structure; thereafter, the minute waterdrops having undergone the dewing and the dispersion in casting liquid surface or liquid interior are evaporated to thereby obtain a porous honeycomb structure using the waterdrops as molds; and this structure is at least halved by peeling in the direction of thickness thereof".

Therefore, there is no common matter considered as special technical features within the meaning of PCT Rule 13.2, second sentence, and hence no technical relationship within the meaning of PCT Rule 13 can be found between these different inventions.

In summing up, it is apparent that claims 1, 4 and 7-10, claim 2, claims 3 and 14 and claims 5, 6, 11-13 and 15-27 do not satisfy the requirement of unity of invention.